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10/594,593	12/19/2006	Shunichi Osada	0599-0219PUS1	6807

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EXAMINER

KHATRI, PRASHANT J

ART UNIT	PAPER NUMBER
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1794

NOTIFICATION DATE	DELIVERY MODE
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04/02/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/594,593	Applicant(s) OSADA ET AL.	
	Examiner PRASHANT J. KHATRI	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-14 and 16-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-14 and 16-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In response to Amendments/Arguments filed 1/5/2009. Claims 1-3, 5-14, and 16-37 are pending. Claims 1-3, 5-14, and 16-37 are amended. Claims 4 and 15 are cancelled.

Claim Objections

1. Claims 2-3 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In light of the amendment to claim 1 of "the total number of layers A and layers B is no less than 640", claims 2-3 which each require "the total number of layers A and layers B is no less than 250" are now each broader than claim 1.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear as to what range of values the phrase "substantially" would encompass.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-3, 5-14, and 16-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hebrink et al. (**US 20010019182**) with evidence from Arends et al. (**US 5360659**) in view of Weber et al. (**US 6025897**).
5. Hebrink et al. disclose a method and apparatus for forming several embodiments and stacking schemes for polymers of different or similar structures that may be used for various types of films such as mirrors, polarizers, and the like. Prior art discloses an alternate stacking scheme comprising two different resins (**para. 0076**). Regarding the resins, prior art discloses the resins may be PET as the first resin and preferably a copolyester based on PET (**para. 0050**). In terms of the copolyester, prior art discloses one such copolyester as Eastar™, a copolyester believed to comprise cyclohexanedimethylene diol units and terephthalate units (**para. 0057**). Examiner notes that the material Eastar™ is used in the present invention and therefore must contain the above units. Concerning the presently claimed difference in reflectance before and after heat-setting, it is noted that PET retains birefringence after stretching and has little or no absorbance within the visible range (**para. 0044**). Prior art additionally discloses that a heat-setting treatment after casting improves dimensional stability and reduces shrinkage (**para. 0131**). Therefore, Examiner takes the position that the PET/coPET or PET/ Eastar™ resin scheme would inherently retain the optical properties prior to and post heat treatment because of the above reasoning and the

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materials disclosed are the same as that presently claimed. Concerning the alternating scheme and the 5 layers of each resin presently claimed, prior art incorporates by reference US 5360659 as showing a suitable film [0080], in which one embodiment (**FIG. 2 of 5360659**), which shows 5 layers of each of resins A and B that are alternating. Regarding the unevenness, prior art discloses that the film uniformity is controlled by process conditions such as rheological matching, feedback design, multiplier design, temperature, casting wheel speed and the like (**para. 0138**).

Furthermore, prior art discloses that the control of such parameters yields a film that controls light transmission or reflected at a particular bandwidth varying by less than 1 or 2 nm over an area (**para. 0145**). Examiner takes the position that the film would maximize uniformity and within the presently claimed range of unevenness. Further, the reflectance would vary therefore less than the presently claimed 5% to 10%.

Concerning claims 10-12, prior art discloses the various layers in the film have different thicknesses across the film forming a gradient. Prior art further discloses one common layer thickness gradient is linear wherein the thicker layers are a certain percent thicker than the thickness of the thinnest layers (**para. 0085**). An example given is a ratio of 1.055:1, which is within the presently claimed ratio (**para. 0085**). Examiner considers the above as having a gradient from thicker to thinner. Further, it is noted that the "layer thickness could decrease, increase, decrease again from one major surface of the film to the other" (**para. 0085-0086**). The reasoning behind this gradient is to provide sharper band edges. Regarding claims 13 and 14, prior art discloses several embodiments wherein the film made by this method suppresses second, third, and

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fourth order harmonics in reflection bands (**para. 0083-84**). Additionally, since the thickness ratio is within the presently claimed range, Examiner takes the position that reflectance of higher orders would be inherently less than 30%. Concerning claim 25, prior art discloses film stacks of made from the method may comprise color variations by means of embossing and other methods known within the art (**para. 0146-0151**). In regards to claims 20-23, Prior art further discloses skin layers comprising of PET and other like materials may be applied to the optical stack (**para. 0161**). Further, the skin layer may comprise silica particles in which both the thickness of the skin layer and size of particle are such that the optical properties of the optical stack are not comprised (**para. 0157**). It is further noted that the skin layer is a thickness of 2% to about 50% without comprising optical properties (**para. 0159**). Examiner takes the position that the value would encompass the presently claimed thickness values. Regarding the use of adhesives, prior art discloses adhesives that are disposed onto a surface wherein said adhesives are optically clear in the wavelength region the film is designed to be transparent in (**para. 0164**). Examiner takes the position that the above disclosures deem the presently claimed elements as being optimizable features that one of ordinary skill in the art would have known at the time of invention to vary as not to disrupt or severely impact optical properties of film. The dimensions of the particles and the thickness of both the adhesive and skin layer are known to be optimizable features. Hebrink et al. discloses the above wherein the particle-containing skin layer imparts abrasion resistance yet maintains optical properties (**para. 0157**). Further the adhesive allows the optical film to be disposed onto various different surfaces yet has a thickness

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to maintain the optical properties desired for the application (**para. 0164**). The motivation to apply an adhesive and a skin layer containing particles is to create a removable film that imparts abrasion-resistance to the structure. Examiner further takes the position that the abrasion-resistance is optimized by the loading value of the particles to prevent scratches and the mere measurement of abrasion is simply an inherent feature of the particles. The courts have held that “a compound and all its properties are mutually inseparable”, *In re Papesch*, 315F.2d 381, 137 USPQ 42, 51 (CCPA 1963). Further, attention is drawn to MPEP 2112.01, which states that “products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). It is also noted that the loading value is a feature that is balanced between optical properties and abrasion resistance. Thus, it would have been obvious to one of ordinary skill in the art to have thickness and particle sizes as not to comprise optical properties yet still include abrasion-resistance and allow removability of the optical film. Regarding claims 27-32, prior art discloses the films may be made into various types of films and optical devices for different applications (**para. 0173-200**). Regarding claim 32 specifically, Examiner takes the position that the above is a use claim and treated as such. Concerning claims 19, 26, and 33-36, Examiner takes the position that the properties, although not explicitly disclosed by prior art, are considered to be inherent features of the film because the materials disclosed by prior art are the

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same as those presently claimed. The courts have held that “a compound and all its properties are mutually inseparable”, *In re Papesch*, 315F.2d 381, 137 USPQ 42, 51 (CCPA 1963). Further, attention is drawn to MPEP 2112.01, which states that “products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Prior art further discloses the use of multipliers and feedbacks to form multi-layer optical films (**para. 0088-0091**). However, prior art is silent to the number of layers presently claimed and reflectance.

6. Weber et al. disclose an alternating two-resin optical stack that may be comprised of the same resins disclosed by Hebrink (**col. 4, lines 40-49; col. 21, lines 1+**). Prior art discloses the transmission of the optical film is less than 10% (**col. 18, lines 27+**). It is known within the art that a rough estimation of reflectance is found by the following formula: 100% minus the transmission, which would yield a reflectance value. Therefore, examiner takes the position that the reflectivity in this case would be greater than 90%. Regarding the number of layers and thickness presently claimed, Examiner takes the position that the thickness of each layer would be optimizable depending on the application as it is known within the art that optical properties may be tuned by varying both (**col. 22, lines 6+**). Further, it is noted that prior art discloses the number of layers within the stack is less than 2000 (**col. 22, lines 6+**).

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7. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Hebrink discloses a method and apparatus for forming multilayer optical film stacks by means of multiplier. However, prior art is silent to the presently claimed number of layers. Weber et al. disclose that the number of layers is optimizable in both thickness and number to achieve the desired optical properties. Therefore, it would have been obvious to one of ordinary skill in the art to vary both the thickness and the number of layers to achieve the optical properties desired yet still maintaining the versatility of the film materials.

Response to Arguments

8. Applicant's arguments, see p. 10, filed 1/5/2009, with respect to the objection of the drawings have been fully considered and are persuasive. The objection of the drawings has been withdrawn.

9. Applicant's arguments, see p. 10, filed 1/5/2009, with respect to the abstract have been fully considered and are persuasive. The objection of the abstract has been withdrawn. Examiner acknowledges corrected abstract.

10. Applicant's arguments, see p. 10-11, filed 1/5/2009, with respect to the 112 rejections of claims 8 and 17 have been fully considered and are persuasive. The rejection of the above claims has been withdrawn.

11. Applicant's arguments filed 1/5/2009 have been fully considered but they are not persuasive. Concerning the 112 rejection of claim 22, it is acknowledged that the specification reads "essentially not to include particles of which the average particle

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diameter is no less than 20 nm and no greater than 20 microns". However, the subsequent sentences seem to recite that there are diffusivity and reflectivity issues caused if there are any particles of those sizes within the layers. Further, it is noted that the phrase "essentially not to include" would also be considered indefinite given there are no guidelines as to the range of particles with such sizes to be considered "substantially" included.

12. Applicant's arguments filed 1/5/2009 have been fully considered but they are not persuasive. Applicant asserts that Hebrink alone and in combination with Weber is silent to a multilayer film exhibiting the presently claimed reflectance peaks and methods thereof. Concerning the reflectance peaks, it is noted that the materials disclosed are the same as that presently claimed; therefore, Examiner takes the position that the resulting reflectance peaks are intrinsic to the materials. The courts have held that "a compound and all its properties are mutually inseparable", *In re Papesch*, 315F.2d 381, 137 USPQ 42, 51 (CCPA 1963). Further, attention is drawn to MPEP 2112.01, which states that "products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Additionally, Examiner would like to point out that Hebrink discloses process conditions such as rheological matching, feedblock design, multiplier design, temperature, casting wheel speed and the like can be controlled (**para. 0138**). Furthermore, prior art discloses that the control of such

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parameters yields a film that controls light transmission or reflected at a particular bandwidth varying by less than 1 or 2 nm over an area (*para. 0145*). Applicant further asserts that " the uniaxially oriented thermoplastic films mentioned in Hebrink '182 must shrink in the oriented direction upon application of heat, such that it is not possible to satisfy the requirement that a reflectance peak differ by no greater than 15% after heating, as in the present invention". However, it is noted that "the arguments of counsel cannot take the place of evidence in the record", In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). It is the examiner's position that the arguments provided by the applicant regarding the claim that the prior art will not have reflectance peaks differing no greater than 15% upon application of heat must be supported by a declaration or affidavit. As set forth in MPEP 716.02(g), "the reason for requiring evidence in a declaration or affidavit form is to obtain the assurances that any statements or representations made are correct, as provided by 35 U.S.C. 24 and 18 U.S.C. 1001".

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRASHANT J. KHATRI whose telephone number is (571)270-3470. The examiner can normally be reached on M-F 8:00 A.M.-5:00 P.M. (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PRASHANT J KHATRI
Examiner
Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794